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ROLLING RECESSIONS

REGIONAL ECONOMIES ARE growing across the nation, leading some to observe that this shared national expansion differs considerably from the traditional seesaw of regional downturns and upswings. However, this perception about the past is based on the relatively recent experience of the 1980s and early 1990s, in which some regions contracted while others expanded. Before then, regional economies tended to move together. What contributed to this out-of-sync behavior? Does the situation differ today?

A continuation of this pattern of regional disparities could have significant implications for the national business cycle. Just as the nation is composed of regions, the national business cycle can be thought of as the sum of regional business cycles. If parts of the nation expand while others contract, the nation as a whole may have less severe recessions and less volatile business cycles. The current U.S. expansion, along with the expansion of the 1980s, has been exceptionally long, far exceeding the four-year average for post–World War II expansions. One contributor to this phenomenon may be diverging regional business cycles.

Many factors can cause regional business cycles to differ. For example, national shocks may affect regions differently, due to differing tax and regulatory environments or combinations of labor and

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capital. Regional cycles are also influenced by shocks specific to the region, such as droughts or regional regulatory changes.

One particular explanation for diverging regional cycles gained prominence in the 1980s—"rolling recessions." Analysts coined this term to describe a phenomenon in which some industries experienced downturns in reaction to shocks, or changes in the national economy, while others continued to do well. These rolling recessions may have led to divergent regional cycles as regions with varying output mixes reacted differently to each industry downturn.

While industry downturns may have influenced the regional economic differences of the 1980s and early 1990s, other factors were also at work, such as differences in taxes, local construction cycles and labor costs. These factors may become relatively more important in future regional differences, as increasingly similar regional output mixes should lead to more similar responses to industry shocks.

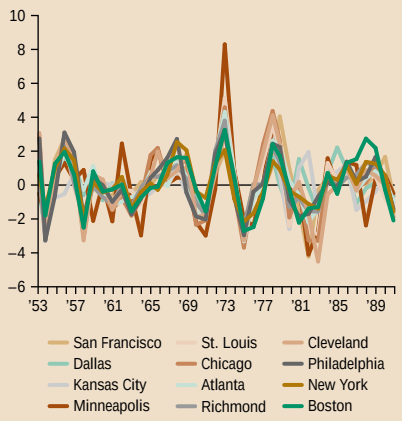
Business Cycles

There are two basic ways of looking at the business cycle. The one underlying most media discussion focuses on absolute increases and decreases in economic activity. For example, an increase in many indicators, such as employment and gross domestic product, over many months is considered an expansion. Conversely, a decline in these indicators over many months is regarded as a contraction.

An alternative definition of the business cycle, which this article uses, is grounded not in terms of absolute increases and decreases in economic activity but in terms of fluctuations around a trend. When economists look at economic indicators, they first exclude the seasonal patterns, such as the increase in holiday retail sales, to get a more accurate picture of how the economy is doing relative to other times of the year. When looking at business cycles, economists go a step further, eliminating not only these short-term changes but also the trends—changes that occur over a long horizon, such as a decade or more. For example, over a long period, employment numbers will trend upward with a growing population. Elimination of both the short-term ups and downs and the long-term trends leaves the cyclical components, which show where the economy is relative to where it would be if it grew at a nice, steady pace over the years.

There are a number of ways to divide the nation for the purpose of studying regional cycles, such as at the state or census-region level. One interesting approach is to look at regions that form or encompass clusters of economic activity, which was the basis for how the country was divided when the Federal Reserve districts were delineated in 1913. One might expect to find, within each area of concentrated economic activity, a common business cycle that could differ from that of another location. Although the economy has evolved since 1913, this division seems reasonable for an analysis of regional business cycles.

Chart 1
Cyclical Components of Real Personal Income of 12 Federal Reserve Districts, 1953–91



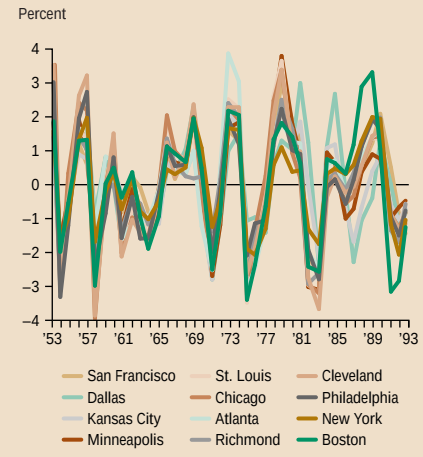
Do Regional Cycles Just Reflect National Industry Cycles?

As already noted, one can think of the business cycle in terms of fluctuations in economic activity around the trend. At the national level, economists typically focus on such indicators of economic activity as gross domestic product or the unemployment rate. At the state or Federal Reserve district level, a narrower range of indicators is available, such as personal income and employment.

The cyclical components of personal income in the 12 Federal Reserve districts are shown in Chart 1. The picture reveals that the cyclical components of personal income tend to move together, increasing and decreasing at about the same time, although not perfectly and not at all times. To the extent the cycles are similar, this suggests that regional cycles are responses to changes in the national economy, rather than region-specific changes. As can be seen in Chart 1, the degree of correlation of economic activity among the 12 Federal Reserve districts was strongest for the cycle associated with the run-up to the oil price shock of 1974.

During the 1980s, however, there were signs that the districts' cycles were becoming less synchronized, to a degree not seen in earlier postwar decades. While there were a few years before the 1980s in which some regions diverged, the disparities were not as pronounced or as frequent. Chart 2 shows the same pattern for employment. It is difficult to say how close the regional cycles are today. While regions across the country are growing in terms

Chart 2
Cyclical Components of Nonfarm Employment Of 12 Federal Reserve Districts, 1953–93



of absolute measures, they may still differ in terms of movement around their trends. Unfortunately, the econometric techniques used to obtain cyclical components do not allow reliable estimates for more recent years.

The divergence in regional cycles in the 1980s may have been caused by a series of changes in the national economy that had varying effects on regions due to their differing regional output mixes. This is consistent with the notion of rolling recessions—different industries experiencing downturns at different times—that permeated U.S. policy discussions in the 1980s. For example, a manufacturing downturn hit the Midwest in the early 1980s. Then the oil price drop of 1986 hurt the oil patch, and defense cuts stung California and New England in the early 1990s. In addition, these downturns caused some migration of workers, which in turn helped fuel other regions' expansions, such as those of Texas and California in the early 1980s.

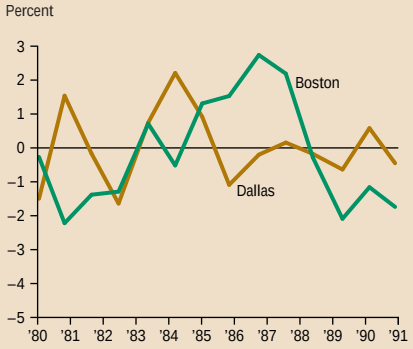
Studies of rolling recessions' effect on regional economies in the 1980s centered on absolute increases or decreases in regional indicators such as employment, gross state product or personal income. However, looking at fluctuations around the trend, the same patterns appear. In 1985, personal income in the Midwestern districts decreased toward their trends with the decline of the manufacturing sector, while personal income in the Dallas and Kansas City districts continued to increase. This decline in certain national manufacturing industries affected the Midwest to a greater extent because of the region's larger concentration of these industries.

The following year, the oil industry plummeted with the oil price shock of 1986. Oil price changes, although national shocks, affect the cycles of energy-producing and energy-consuming regions differently. In 1986, when oil prices dropped by half, Texas' personal income plunged below trend. But while the oil price drop had a large negative impact on the Texas economy, it spurred growth in other parts of the country, such as New England, as energy costs fell (*Chart 3*).

A few years later, cuts in national defense spending caused the defense industry to decline. This national shock was clearly a source of weakness for New England and some other areas of the country, such as California. Dallas Fed economist Lori Taylor studied employment sensitivity to defense spending by state, based on each state's industrial mix and each industry's sensitivity to defense spending.[1] She found that Connecticut was the most defense-sensitive state because of its high concentration of transportation equipment manufacturing, particularly shipbuilding. For example, as Chart 4 shows, transportation equipment manufacturing fell much further than the national average in states with a high concentration of defense-related transportation manufacturing, such as Connecticut and California. In addition to Connecticut, other New England states had above-average sensitivities, due in part to high concentrations of electronics manufacturing.

If these rolling recessions were to recur, the regional responses might be less disparate since there is evidence that over the decades regions have become more similar in terms of industry mix.[2] For example, Dallas Fed economists Steve Brown and Mine Yücel found that because state economies are becoming more similar in their composition, the variation across states in the response to changing oil prices is narrowing.[3] However, industry mix does not seem to be the only determinant of regional response to an industry downturn. The industry shocks that occurred before the 1980s, such as the oil price changes and defense cuts of the 1970s, were not accompanied by widely varying regional responses, in spite of a greater degree of regional industry concentration. The cause of this increased responsiveness to industry shocks in the 1980s is still unknown.[4]

Chart 3
Cyclical Components of Real Personal Income Of the Dallas and Boston Districts, 1980–91

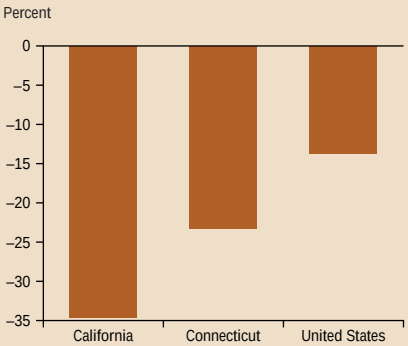


Other Regional Influences

The series of national shocks to the manufacturing, energy and defense industries is clearly reflected in movements in Federal Reserve districts' personal income and employment. Regions responded differently to these shocks because they had differing degrees of dependence on these industries. However, other region-specific factors also influence regional cycles.

For example, a change in federal tax laws affects states differently, depending on state tax structure. States may choose from a variety of levies to raise revenue, such as sales, income, property and business taxes. Since some of these taxes are not deductible against federal income taxes, sensitivity to changes in federal income taxes will depend on the state tax structure. In addition, these differences in taxes, or in government services and quality of life, can lead to various combinations of labor and capital across regions. Differing capital–labor mixes in turn contribute to varying regional responses to national shocks, such as changes in minimum wage laws or capital gains taxation.[5]

Chart 4
Change in Transportation Equipment Manufacturing Employment, 1988–93



Implications for the Economic and Monetary Union

Business cycles at the Federal Reserve district level may shed light on what Europeans can expect under the Economic and Monetary Union (EMU), scheduled to go into effect January 1, 1999.[1] In discussions of EMU's likely implications for Europe, the United States is often cited as an example of an enduring monetary union, while the U.S. central bank, the Federal Reserve, is cited as a model of how a central bank would function in a monetary union. Thus, at least in principle, the business-cycle experience of the U.S. regions holds useful lessons for what Europe can expect under EMU.

Dallas Fed economists Mark Wynne and Jahyeong Koo found a greater similarity among Federal Reserve district business cycles than among those of prospective EMU members. Insofar as the United States can be a model of what might occur in Europe with a credible monetary union, these patterns suggest the possibility of greater synchronization of business cycles across EMU countries than has been the case in the past. However, important differences remain between the Federal Reserve System and EMU, such as the degree to which each region or EMU country can influence economic policy. Policy differences, such as those that affect the cost of doing business, influence economic activity within the United States. The policy differences between the EMU countries are likely to be even more important than those of regions with much less autonomy.

[1] Mark A. Wynne and Jahyeong Koo, "Business Cycles Under Monetary Union: EU and U.S. Business Cycles Compared," Federal Reserve Bank of Dallas Working Paper no. 7, 1997.

The construction sector, although influenced by national factors such as interest rate and tax law changes, also responds to local characteristics. For instance, changes in a region's industry mix or demographic characteristics may trigger a change in construction activity. This response to local characteristics may lead construction activity to diverge from economic activity that is more dependent on national demand. For example, in the 1980s, both New England and Texas experienced construction booms as other parts of their economies slowed. Although oil prices fell in 1982 and the Texas economy slowed, Texas construction activity surged throughout the mid-1980s. This boom was due in part to Texas banking institutions' increased interest in real estate investments following losses in energy-related lending and Texas thrifts' ability to fund commercial construction projects following deregulation. Similarly, in the mid-1980s, New England construction thrived, largely because of strong demand from locally oriented industries, masking employment declines in the region's export-related manufacturing sector.[6]

This out-of-sync behavior within the Texas and New England economies led Dallas Fed economists to study the influences of the construction sector, oil prices and the national business cycle on the Texas business cycle of the late 1970s and 1980s.[7] They found that while the U.S. economy and oil prices had the largest effect, the construction sector also had a significant impact.

Another example of region-specific influences can be found in New England's late-1980s downturn. Although defense cuts and nationally declining manufacturing industries certainly contributed to the downturn, a loss of market share to competitors in other regions was also to blame. Edward Moskovitch, in a Boston Fed article, reported that a wide range of durable goods industries lost market share in the mid-1980s.[8] Moskovitch cited the high cost of doing business in the region, compared with other regions, as the reason for the decline across so many New England industries. Thus, New England's downturn was fed by local characteristics as well as national influences.

However, regional factors that greatly influenced regional economies in the past may not be as important in the future. Some of these regional characteristics may be changing, possibly becoming more alike across regions, as lower transportation costs, better communications options, and access to national and international capital markets allow firms to locate in places not previously considered. On the other hand, this may just mean that other characteristics, such as local taxes or quality of life, will become more important influences on business formation.

Conclusion

The concept of the rolling recession emerged in the 1980s in response to shocks in the economy that affected some industries more than others. By extension, the downturns in these industries, in combination with other economic influences, affected some regions more than others, causing some areas of the country to experience slowing of their economies while others saw their economies expand. Whether the divergence of the 1980s represents just a temporary phenomenon unlikely to be repeated or a fundamental change in the characteristics of the national economy cannot be determined without further study and a longer period of observation. Therefore, it is too soon to tell if the regional business cycles are currently in sync or not.

— Sheila Dolmas
Mark A. Wynne
Jahyeong Koo

Notes

[1] Lori Taylor in *Defense Spending & Economic Growth,* James A. Payne and Anandi P. Sahu, editors (Oxford: Westview Press, 1993), pp. 203–20.

[2] Sukkoo Kim, "Expansion of Markets and the Geographic Distribution of Economic Activities: The Trends in U.S. Regional Manufacturing Structure, 1860–1987," *Quarterly Journal of Economics* 110 (November 1995): pp. 881–908.

[3] Stephen P. A. Brown and Mine K. Yücel, "Energy Prices and State Economic Performance," Federal Reserve Bank of Dallas *Economic Review*, Second Quarter, 1995, pp. 13–23.

[4] There are many opinions about why the 1980s were different. Some speculate that the Federal Reserve adopted a more forward-looking, low inflation policy in the early 1980s. See Ken Emery and Nathan Balke, "Inflation and Monetary Restraint: Too Little, Too Late? " Federal Reserve Bank of Dallas *Southwest Economy*, Issue 1, 1995, pp. 3–5, for a description of how monetary policy may have changed course. Such a policy change could potentially influence regional business cycles as well.

[5] See Lori Taylor and Mine Yücel, "The Policy Sensitivity of Industries and Regions," Federal Reserve Bank of Dallas Working Paper no. 12, 1996.

[6] For more detail, see Lynne E. Browne, "Why New England Went the Way of Texas Rather than California," *New England Economic Review*, January/February 1992, pp. 23–41.

[7] D'Ann Petersen, Keith Phillips and Mine Yücel, "The Texas Construction Sector: The Tail that Wagged the Dog," Federal Reserve Bank of Dallas *Economic Review*, Second Quarter, 1994, pp. 23–33.

[8] Edward Moskovitch, "The Downturn in the New England Economy: What Lies Behind It?" *New England Economic Review*, July/August 1990, pp. 53–65.

Is the Fed Slave to a Defunct Economist?

JOHN MAYNARD KEYNES once stated that policymakers are "usually the slaves of some defunct economist." Well, according to a wide range of commentators, recently it's been Keynes himself who has held policymakers enthralled.[1] These commentators complain that the Fed has tried to "fine-tune" real activity—and that, in doing so, the Fed has imposed an artificial speed limit on the economy and kept the unemployment rate unnecessarily high. More specifically, Federal Reserve officials are accused of having relied too heavily on an analytical tool called the Phillips curve when deciding whether to raise the federal funds rate.

This article provides some historical perspective on the critics' complaints and evaluates the merits of their arguments. I argue that Fed policymakers would deserve censure if they behaved as the critics claim. However, the critics' accusations are largely without merit, and their own policy prescriptions are flawed.

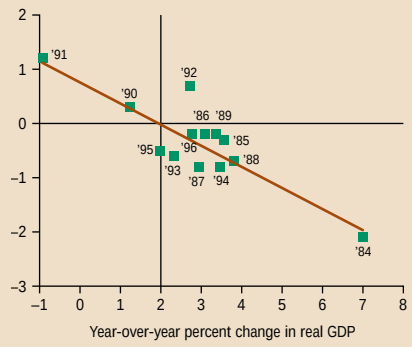
Current Rates of Output Growth Are Not Sustainable

Over the past three years (1994:1–97:1), real GDP has grown at a 2.9 percent average annual rate. Over the past four quarters (1996:1–97:1), it has grown at a whopping 4 percent annual rate. The idea that growth at these rates can continue indefinitely is appealing but unrealistic. Chart 1 shows the relationship between real GDP growth and the change in the unemployment rate since the mid-1980s. For example, the point plotted in the extreme lower right-hand corner shows that real GDP rose by 7 percent in 1984, while the unemployment rate fell by 2 percentage points. More generally, the chart shows that the unemployment rate has tended to fall whenever GDP growth has much exceeded 2 percent. Indeed, the unemployment rate has declined in fully nine of ten years in which growth has exceeded 2 percent (the exception being 1992). In two of three years in which growth has fallen short of 2 percent, the unemployment rate has risen. In the exceptional year (1995), GDP growth fell below 2 percent by only 1 one-hundredth of a percentage point.

The implication is that GDP growth at recent rates must eventually drive unemployment to zero, unless productivity or the labor force begins to increase at a substantially faster clip than we have seen so far during this expansion.[2] Something is going to have to give, and that something is likely to be the growth rate of real GDP.

This conclusion leaves open the possibility that noninflationary growth of 2.5 percent or more is feasible over the next year or two. It's on the issue of whether strong growth can be sustained for another few years that reasonable people may disagree, depending on their beliefs about the nature of the short-term output–inflation trade-off.

Chart 1
Rapid Output Is Not Sustainable



SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

Chart 2
The Phillips Curve

SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

The Phillips Curve

The downward sloping line shown in Chart 2, fitted to U.S. unemployment and inflation data from the 1960s, is called a Phillips curve. The Phillips curve is named after New Zealand-born economist Alban W. Phillips, who used British data to demonstrate that wage inflation tends to be high when the unemployment rate is low. Phillips' rationalization of this relationship was simple: the price of a good increases when the good is in high demand. Low unemployment rates are a symptom of high demand for labor, so low unemployment rates are associated with rapid increases in the price of labor. Economists often plot Phillips curves using product price inflation in place of wage inflation, because the two types of inflation tend to move together.

From 1958, when Phillips originally published his research, through the end of the 1960s, many economists believed that policymakers could choose any point along the Phillips curve and hold the economy there indefinitely. However, the 1970s forced people to rethink

the Phillips curve. This reevaluation had two components, which I will discuss in turn.

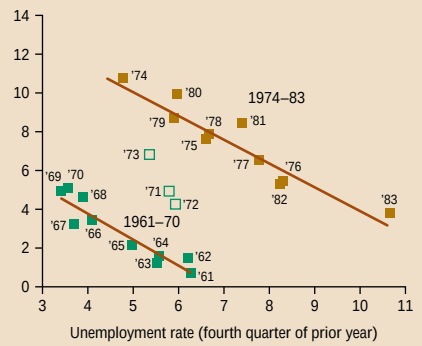
Lesson 1: Changes in Inflation Expectations Shift the Phillips Curve

First, events of the 1970s increased appreciation for the importance of inflation expectations.[3] Milton Friedman and Edmund Phelps led the charge, arguing that monetary policy is like a drug for which the economy can build up a tolerance: larger and larger doses are required to achieve a given effect. Initially, an acceleration in money growth puts more real purchasing power in people's pockets. Increased sales mean more jobs, and unemployment falls. Consequently, the economy follows a path that looks a lot like the Phillips curve of the 1960s. However, as the rapid money growth continues, the economy begins to adapt to it. Eventually, wages and prices catch up to the money supply, and the stimulus to output and employment fades away. Only higher inflation remains. In Chart 3 (an updated version of Chart 2) we see a move to the right as we follow the economy from 1970 to 1971 and 1972. At first, Nixon's wage and price controls kept inflation down to 4 percent, but in 1973 inflation broke loose and a new round of stimulus began. By 1974 inflation was above 10 percent. Over the next 10 years—from 1974 through 1983—the economy stayed on a new, higher Phillips curve, representing a less favorable short-run trade-off between unemployment and inflation.

The reason for the shift in the Phillips curve was an increase in inflation expectations. In the 1960s, people thought that inflation would eventually stabilize at an annual rate of about 2 percent. From the mid-1970s to the mid-1980s, they acted as if inflation would eventually stabilize at an 8 or 9 percent annual rate. The increase in inflation expectations stemmed from policymakers' attempts to keep the unemployment rate artificially low.

The lowest unemployment rate that is consistent, over the long term, with *stable* inflation is called the nonaccelerating inflation rate of unemployment, or NAIRU. A typical NAIRU estimate is 6 percent. At unemployment rates below the NAIRU, there is a tendency for inflation expectations to rise. (Such was the experience of the early 1970s.) At unemployment rates above the NAIRU, there is a tendency for inflation expectations to fall.[4]

Chart 3
Higher Inflation Expectations Shift the Phillips Curve



SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

Unfortunately, you can't look up the value of the NAIRU in an encyclopedia, and it's not published in the *Wall Street Journal*. The NAIRU has to be estimated. A big part of the debate between those who believe that the Phillips curve remains a useful guide to policy and those who do not has to do with how good a handle we have on the NAIRU at any given moment.[5] That brings us to the second important lesson that economists learned during the 1970s.

Lesson 2: The NAIRU Varies Over Time—Not Always Predictably

The sharp oil price increases of the 1970s made it obvious to everyone that supply-side shocks can temporarily change the NAIRU and have an important impact on inflation. A supply shock is any disturbance that alters the amount of output that can be produced from given quantities of land, machinery and human effort. Supply-side shocks are also sometimes called productivity shocks. Aside from oil-price increases, the supply shocks that have received the most attention from macroeconomists are probably crop failures because of drought or flooding.

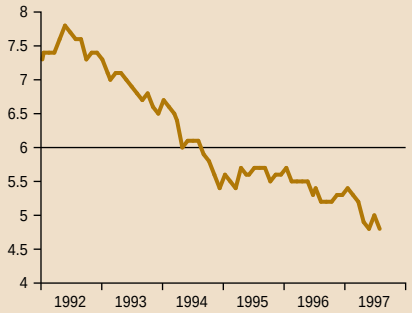
Just how important *are* supply shocks? That's the $64,000 question. Keynesians tend to view such shocks as infrequent and easily accounted for. It's this belief that drives their policy prescriptions. For if supply shocks don't shift the NAIRU around too much, so that its value can be pinned down, then the appropriate policy is obvious: get the unemployment rate to the NAIRU and keep it there. As a practical matter, the Keynesian prescription is for an unemployment rate of about 6 percent and GDP growth of about 2 percent.

Unfortunately for the Keynesians, more and more analysts are coming around to the view that supply-side shocks are so pervasive as to seriously limit the usefulness of the NAIRU as a policy guide. Even after accounting for food and energy shocks, NAIRU estimates vary substantially from year to year. Moreover, in any given year, the exact value of the NAIRU is not known with any confidence. Recent estimates suggest that the NAIRU is probably around 6 percent but could easily be as low as 4.5 percent or as high as 7.5 percent (Staiger, Stock and Watson 1997). Increasingly, analysts regard the NAIRU estimate *du jour* as a yellow caution sign rather than a red stoplight.

Has the Fed Been a Slave to the Keynesian View of the Phillips Curve?

If, as its critics assert, the Fed has been trying to hold the unemployment rate above some preconceived NAIRU, then it has bungled the job. As shown in Chart 4, the unemployment rate has fallen, more or less steadily, from a high of 7.7 percent in June 1992 to a low of 4.8 percent in July 1997. The unemployment rate was last above 6 percent three years ago (in July 1994) despite the fact that, for most of this period, 6 percent was the generally accepted estimate of the NAIRU. Clearly, the Fed

Chart 4
The Fed Has Not Been a Slave to the Phillips Curve



SOURCE: U.S. Department of Labor.

has not been slamming on the brakes. At most, the Fed has been occasionally tapping the brakes to slow the unemployment rate's descent.

It's revealing to look at the unemployment rate in combination with the inflation rate, rather than in isolation. As Chart 5 clearly shows, the short-run Phillips curve shifted down a notch during the mid-1980s in response to the persistently tough anti-inflation stance of the Volker Fed. Then, over the 10-year period from 1985 through 1994, unemployment and inflation varied pretty much as though people believed that inflation would eventually stabilize at around 4 percent. Since 1993, despite a falling unemployment rate, inflation has held steady. (Look at the points marked as stars.) It's beginning to look as though the Phillips curve has shifted yet again and that we're back in the 1960s, with expected inflation down around 2 percent. The challenge for policymakers is to ensure that we don't replay the *entire* 1960s inflation experience.

Why Has Inflation Been So Tame?

Three factors have contributed to the economy's strong inflation performance in recent years. First, we've benefited from a series of favorable supply shocks. These shocks have included innovations in health-care management that have held down medical cost inflation; the spread of cheaper, increasingly powerful computers and telecommunications devices; and increased competition because of deregulation and freer global trade. Second, a more uncertain and more flexible labor market may mean that the unemployment rate has become less useful as a measure of slack in the economy.[6] Finally, the Federal Reserve has conducted policy in a way that has convinced people that it is serious about preventing any significant resurgence of inflation.

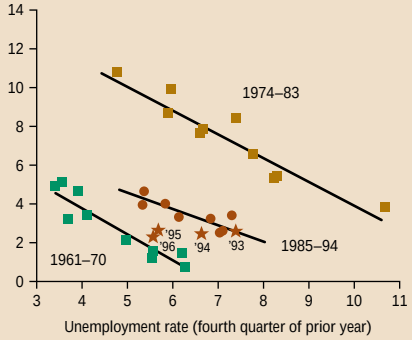
How has Fed policy accomplished this task? Fed Chairman Alan Greenspan may have revealed the answer recently in a speech defending March's quarter-point hike in the federal funds rate. Greenspan said that "persisting—indeed increasing—strength in nominal demand for goods and services suggested to us that monetary policy might not be positioned appropriately to avoid a buildup in inflation pressures" (CitiCorp 1997). Note that Greenspan's statement focuses on the strength of the *nominal* demand for goods and services, not the real demand.

As shown in Chart 6, Federal Reserve policies have kept the level of nominal spending on a fairly steady 5 percent growth track over the past six years. Modest, steady spending growth is an attractive strategy to pursue in the face of uncertainty about the output–inflation trade-off. It is a strategy especially popular among economists trained in the monetarist tradition.

What's so great about a policy of steady spending growth? Since spending growth is the sum of real growth and inflation, a policy of steady spending growth does not preclude strong real growth, *provided* strong real growth is accompanied by low inflation. Turning this statement around, there is little danger that inflation will substantially accelerate under a policy of steady spending growth, for inflation can rise only to the extent that the economy's capacity for real growth falls.[7]

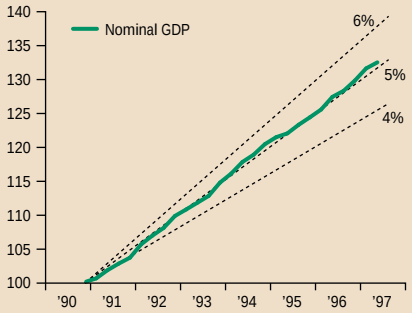
Survey results indicate that Federal Reserve policies during the 1990s have resulted in a gradual reduction in long-term inflation expectations. This reduction in expectations has undoubtedly contributed to the benign behavior of actual inflation in recent years.

Chart 5
Is the Phillips Curve Shifting Yet Again?



SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

Chart 6
Nominal Spending on a 5 Percent Growth Path



SOURCE: U.S. Department of Commerce.

Why Not Target Inflation Directly?

Many of the analysts who have been critical of the Fed seem to feel that the hallmark of a successful monetary policy is not stable output growth (the Keynesian view) and not low and stable spending growth (the monetarist view) but a stable inflation rate.[8] These commentators apparently believe that the Fed should allow output and employment to fluctuate arbitrarily, as long as inflation remains constant.

One problem with this approach is that inflation bounces around so much that a change in trend is often not apparent for six months to a year after it has begun.

Another problem is that the lags between the Fed's policy actions and their

effects on inflation are considerable—most estimates put them at a year or more. When you add the time it takes for policy to change inflation to the time it takes to recognize that a change in policy is needed, trying to target the inflation rate is a little like trying to drive down a highway at 60 miles per hour in heavy fog, and—just to make things interesting—there's a five-second delay between when you apply the brakes and when the brakes are activated.

It's easy to call for inflation-rate targeting in a period when constant inflation is consistent with a booming economy. One has to wonder whether advocates of inflation-rate targeting will be equally vocal the next time we're hit with a major drought or a run-up in the price of oil, when holding inflation constant might require a recession.

The Fed and Its Critics

In summary, some commentators have accused the Federal Reserve of pursuing a Keynesian strategy. They claim that, in a mistaken effort to fine-tune real economic activity, the Fed has stifled output and employment gains that have their origins on the supply side.

The critics advocate an alternative policy—one that would allow output and employment to range freely, as long as inflation holds steady. Since they believe that supply-side shocks make the Phillips curve all but useless as a policy tool, the critics say the Fed should look to indicators of inflation expectations and to sensitive commodity prices for signs that inflation is about to accelerate.

In fact, the Fed has pursued a middle course. It has taken an eclectic approach to evaluating strain in the labor and product markets, neither rigidly enforcing a speed limit on real GDP growth nor panicking as the unemployment rate has fallen below 6 percent. It has allowed positive supply shocks to be reflected in higher output and employment but has restrained growth in nominal spending.

—Evan F. Koenig

Notes

[1] See, for example, Galbraith (1997) and Yardeni (1997a,b).

[2] For an elaboration of this argument, see Krugman (1996).

[3] The analysis that follows is developed more fully in Koenig and Wynne (1994).

[4] Just how quickly inflation expectations adjust and what information they respond to remain the subject of debate. In empirical work, most economists assume that expected inflation is just a weighted average of past actual inflation rates. Historically, this approximation does well, but in macroeconometrics, as in personal investing, "past performance is no guarantee of future results." The success of the standard approach may simply reflect the fact that to date we have seen no policy regime changes important enough to have had a major impact on Fed credibility.

[5] For a defense of the Phillips curve as a policy guide, see Meyer (1997a,b).

[6] For an elaboration, see Duca (1997) and Meyer (1997a).

[7] Thus, a policy of stabilizing nominal spending is a compromise between an output-stabilization policy and a price-level or inflation-stabilization policy. See Koenig (1995).

[8] Analysts expressing such views include Yardeni (1997a,b) and Kudlow (1997).

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Corporate Financing and Governance: An International Perspective

THE DRAMATIC DIFFERENCES across countries in how firms are financed and how their managers are held accountable to shareholders have long been the subject of intense academic scrutiny. Only recently, however, have these issues become a hot policy topic.

In the United States, there is ongoing debate about the best methods of financing and governing firms. In Japan and Germany, corporate finance markets have been substantially deregulated in recent years. Other countries, such as France and Italy, are considering vast privatization efforts and corresponding changes in their financial systems. And the formerly communist countries are putting in place entirely new systems of property rights, business law and financial markets.

In deciding how to fashion their financial markets, policymakers must determine the optimal way to organize their corporate sectors. In doing so, they clearly would benefit from understanding the factors behind the different corporate finance and governance systems in the major industrialized countries.

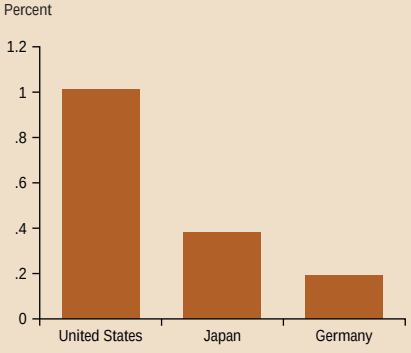
Table 1
Composition of Companies' Credit Market Debt as a Percentage of Total Credit Market Debt, 1995

	United States	Germany	Japan
Total intermediated debt	54	74	77
Intermediated debt from banks	17	66	60
Securities	46	26	23

NOTE: Credit market debt excludes trade debt. Intermediated debt refers to loans from financial intermediaries. Securities include commercial paper, other short-term bills and long-term bonds.

SOURCE: *OECD Financial Statistics, Part III.*

Chart 1
Gross Issuance of Public Equity as a Percentage of GDP, 1995



SOURCES: Federal Reserve Board; *Securities Markets in Japan*, 1996; *Monthly Report of the Deutsche Bundesbank.*

Even the casual observer can see significant differences in how firms are financed and governed in the major industrialized countries. For example, U.S. firms rely heavily on corporate securities markets to finance investment, whereas for Japanese and German firms, intermediaries—principally banks—have traditionally been the most important source of external finance. This is illustrated by the relatively small amounts of money raised in the Japanese and German stock markets (*Chart 1*) and the much higher share of external finance that comes from banks (*Table 1*) in Japan and Germany.

The three countries also exhibit big differences in the primary mechanisms of corporate governance. One important mechanism is high ownership concentration. If a firm's ownership is concentrated in the hands of a few investors, each will have sufficient incentive to invest in acquiring information and monitoring management. Large shareholdings also confer the ability to exert control over management, through either voting power or board representation, or both. A second important mechanism is the credible threat of a hostile takeover, which can motivate managers to act in shareholders' best interests.

One of the starkest differences between the United States and Germany and Japan is the frequency of such hostile takeovers. Since World War II, for example, only four successful hostile takeovers have occurred in Germany. They're almost as rare in Japan. Conversely, in the United States, more than 10 percent of the 1980 Fortune 500 have since been acquired in a transaction that was hostile or started off that way. Obviously, the threat of a hostile takeover is a more important component of the corporate governance mechanism in the United States than it is in Germany or Japan.

In contrast, firms in Japan and (especially) Germany exhibit much higher degrees of ownership concentration than does the United States. Ownership is very heavily concentrated in German firms. The five largest shareholders of a firm own, on average, close to 50 percent of the firm's outstanding equity, compared with around 33 percent in Japan and about 25 percent in the United States (*Chart 2*). These large shareholders in Japanese and German firms are primarily banks, other financial institutions such as life insurance companies, and nonfinancial corporations. Together they hold about 70

percent of the outstanding shares of German and Japanese firms, in contrast to the United States, where, despite the fast growth of mutual fund holdings in recent years, direct individual holdings remain relatively more important (*Table 2*).

These differences in finance and governance are not simply accidents of history but a result of major differences in the legal and regulatory environments of the countries' financial systems. The differences are essentially of two kinds. First is the degree to which firms are restricted from utilizing nonbank financing. In contrast to the United States, Germany and Japan have traditionally discriminated heavily against the development of corporate securities markets. The restrictions have revolved largely around stiff securities transaction taxes and cumbersome issue-authorization procedures that are required for security offerings. Combined, they have imposed a heavy burden on firms seeking nonbank finance, domestically or abroad.

Second are differences in the legal and regulatory restraints on large investors being "active" in firms. U.S. laws are generally much more hostile to investors taking large, influential equity stakes in firms and actively monitoring management. These laws—which include Glass–Steagall restrictions on banks' holding of corporate equity, portfolio regulation of other financial institutions, and tax, insider trading and corporate bankruptcy laws—have led to relatively dispersed holdings of equity in the United States. The absence of such restrictions in Japan and Germany has encouraged the higher levels of ownership concentration in these countries.

Of course, as a financial system's legal and regulatory environment changes, so may methods of corporate finance and governance. Both Japan and Germany have lifted many of the more onerous restrictions on their corporate securities markets in the past 15 years. This is already reducing their firms' dependence on bank lending. In the United States, there has been some relaxation of the numerous restrictions on financial and nonfinancial corporations taking large equity stakes in other firms.

Clearly, there is some long-term convergence of the legal and regulatory environments of these countries. However, this convergence is not toward the German, Japanese or U.S. system as they now exist but to an environment in which financial institutions and other investors are free to take large equity stakes in firms and in which corporate capital markets are unhindered by regulatory and legal obstacles.

Speculating about the primary mechanisms of corporate financing and control in such a system is interesting, given that these conditions don't currently exist in any industrialized country. The closest approximation to this emerging model may be the United States in the early 20th century, before the passage of Glass–Steagall.

In addition, there is no guarantee that a convergence of the three countries' regulatory environments will mean a convergence in their methods of corporate financing and governance, if institutional history has any influence on the financial system's structure. For this reason, differences in methods of corporate financing and governance may persist long after differences in the legal and regulatory environments have disappeared.

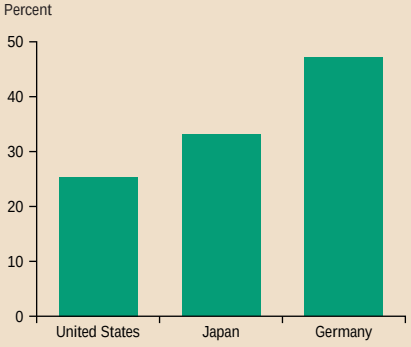
—Stephen D. Prowse

Table 2
Percentage of Outstanding Corporate Equity Held by Various Sectors in the United States, Germany and Japan, 1995

	United States	Germany	Japan
Financial institutions	44.5	30.3	35.8
Banks	.2	10.3	13.3
Other financial institutions	44.3	20.0	22.5
Nonfinancial firms	15.0	42.1	31.2
Individuals	36.3	14.6	22.4
Foreign	4.2	8.7	10.1
Government	0	4.3	.5

SOURCE: Stephen D. Prowse, "The Structure of Corporate Ownership in Germany," working paper, 1997.

Chart 2
Ownership Concentration of Nonfinancial Firms
(Percentage of outstanding shares held by the five largest shareholders)



SOURCE: Stephen D. Prowse, "The Structure of Corporate Ownership in Germany," working paper, 1997.

Regional Update

AFTER MORE THAN a decade of growth, the Texas economy shows few signs of faltering. Federal Reserve Bank estimates indicate that gross state product expanded at a brisk 4.3 percent annual rate in the first quarter. Although employment growth appears to have slowed recently, private nonfarm employment in Texas has grown at a 2.9 percent annual rate since the start of the year. The employment growth is broad based, with only a few noteworthy exceptions—apparel (manufacturing and retailing), chemicals, and computer-related manufacturing.

Despite recent declines in oil prices, employment is up sharply in oil and gas extraction and oil field machinery. The industry press reports shortages of skilled workers and a 12- to 18-month backlog for drill pipe.

Residential construction seems to be heating up again, which is partially offsetting a cooling in nonresidential construction. Recent changes in state and federal tax law should further boost housing construction, particularly at the low end of the price range.

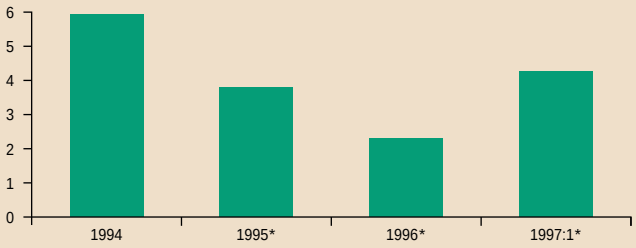
The outlook is for more of the same. The Texas Leading Index jumped in July, signaling continued expansion. The probability of a Texas recession in 1997 is now less than 2 percent.

Labor market tightness is one factor that could dampen the forecast. Beige Book contacts continue to report difficulty finding workers. Average hourly wages are rising at roughly the rate of inflation for most Texas manufacturing industries and much faster than inflation for low-wage manufacturing industries. The September 1 increase in the minimum wage could widen this gap even further. Still, wages are not rising as fast in Texas as they are in the rest of the country, so the state should maintain its competitive edge.

—Lori L. Taylor

Texas Gross State Product

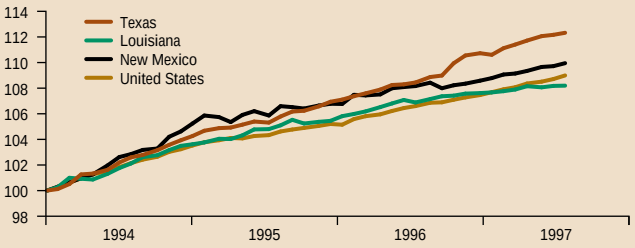
Percent change, annualized



* estimated

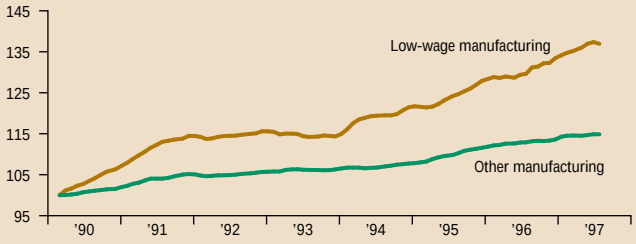
Nonfarm Employment

Index, January 1994 = 100



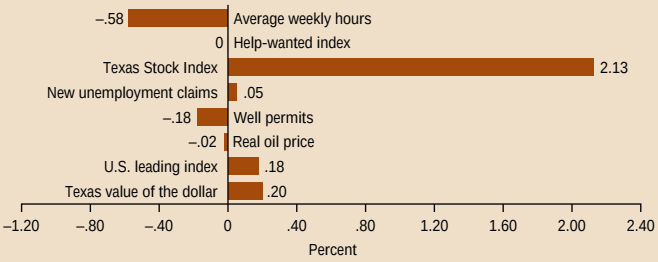
Hourly Wages in Manufacturing Industries

Index, January 1990 = 100



Net Contributions of Components to Change in Leading Index

May–July 1997



Regional Economic Indicators

	Texas Leading Index	TIPI total	Texas employment*					Total nonfarm employment*		
			Mining	Construction	Manufacturing	Government	Private service-producing	Texas	Louisiana	New Mexico
7/97	122.3	126.6	165.2	456.1	1,074.6	1,471.3	5,368.7	8,535.9	1,829.2	707.3
6/97	121.0	126.9	164.5	457.5	1,073.8	1,470.8	5,357.2	8,523.8	1,828.9	705.8
5/97	121.4	125.9	163.4	456.6	1,073.1	1,475.6	5,347.3	8,516.0	1,827.0	705.4
4/97	120.2	124.7	163.1	450.9	1,072.2	1,474.4	5,328.9	8,489.5	1,828.5	703.4
3/97	119.1	124.6	162.5	448.7	1,068.6	1,472.3	5,313.9	8,466.0	1,824.1	702.1
2/97	119.4	124.1	162.7	446.5	1,068.7	1,470.2	5,296.2	8,444.3	1,821.9	701.6
1/97	118.9	124.3	160.7	437.0	1,064.3	1,467.0	5,276.2	8,405.2	1,820.3	699.8
12/96	117.7	124.0	159.4	443.9	1,065.9	1,465.7	5,279.7	8,414.6	1,819.4	698.5
11/96	118.7	123.8	158.7	445.4	1,065.1	1,460.7	5,271.3	8,401.2	1,818.7	697.0
10/96	117.6	123.3	157.9	442.1	1,061.4	1,455.9	5,237.6	8,354.9	1,816.0	696.2
9/96	117.1	123.0	156.9	438.1	1,057.9	1,450.0	5,179.1	8,282.0	1,815.2	694.7
8/96	116.7	123.7	156.6	438.1	1,057.2	1,453.8	5,167.5	8,273.2	1,811.5	697.5

* in thousands

Further Information on the Data

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (Dallas Fed *Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (Dallas Fed *Economic Review*, July 1990).

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